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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,527	09/08/2003	Robert Alan Ulichney	200310065-1	9175

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT PAPER NUMBER

2851

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/657,527

Applicant(s)

ULICHNEY ET AL.

Examiner

Rochelle Blackman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,4-8 and 10-13 is/are rejected.  
7) ☒ Claim(s) 3 and 9 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12/22/03 & 10/27/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

1. Claim 2 is objected to because of the following informalities: the claim recites the limitation " the first projector to surface homography" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.
2. Claim 4 is objected to because of the following informalities: the claim recites the limitation " the at least four projector pixels" in lines 5 and 8 of the claim. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4-8, and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Mayer, III et al. (U.S. Patent No. 6,483,537).

Regarding claim 7, Mayer, III discloses a system (see FIGS. 1-8) for correcting luminance of an image displayed with an oblique shape on a screen (this is considered to be what projected image 34 is displayed or projected on in FIG. 2 and also what the projected image projected by projector 42 is displayed or projected on in FIG. 4, also see 20 in FIG. 2 and *screen* in col. 3, lines 64-65) having a surface, the system comprising: a projector (for example, see 42 of FIG. 4) or for generating the image, the projector having a non-perpendicular optical axis relative to the surface of the screen (the "projector" 42 is considered to have a "non-perpendicular optical axis relative to the surface of the screen" in FIG. 4); a camera for capturing the image, the camera having a substantially perpendicular optical axis relative to the surface of the screen (although the orientation of the camera's optical axis relative to the surface the screen is not explicitly shown in FIG. 4, col. 3, lines 42-46 states that the camera can be put arbitrarily anywhere that it could view the entire raster, which is considered to include putting or positioning the camera so that it has a "substantially perpendicular optical axis relative to the surface of the screen"); a luminance correction engine (see 50 of FIG. 4, and function thereof in FIG. 5) for receiving the captured image from the camera and sending an attenuation array (see 88 and 90 of FIG. 6) to the projector and wherein the projector receives the attenuation array and modifies the luminance of the image (see 92 of FIG. 6).

Regarding claim 8, Mayer III discloses wherein the attenuation array includes a first coordinate system representing the projector (this would be the coordinate system of the image projected by "projector" 42 in FIG. 4), a second coordinate system representing the surface (this would be the coordinate system of, for example, what the projected image projected by "projector" 42 is displayed or projected on in FIG. 4 and/or the *screen* in col. 3, lines 64-65), and a homography between the first coordinate system and the second coordinate system (a "homography" between the "first and second coordinate systems" considered to be produced by "luminance correction engine" 50 during the analysis array generation process in FIG. 6).

Regarding claim 10, Mayer, III discloses wherein the luminance correction engine includes a spatial attenuation array for modifying the shape of the image (see col. 8, lines 46-53).

Regarding claim 11, Mayer, III discloses an apparatus (see FIGS. 1-8) for correcting non-uniformity in luminance of an image generated by a projector and displayed obliquely on a screen (this is considered to be what projected image 34 is displayed or projected on in FIG. 2 and also what the projected image projected by projector 42 is displayed or projected on in FIG. 4, also see 20 in FIG. 2 and *screen* in col. 3, lines 64-65) is having a surface, wherein the projector has a plurality of pixels (see 33 of FIGS. 2, 3a-c, or 1-25 and 52, 54, 56 of FIG. 4) for use in generating images and each projector pixel subtends to a corresponding projected area on the screen, the system comprising: means for capturing the image (for example, see 40 of FIG. 4); means for calculating an attenuation array based upon the captured image (see function

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of 50 of FIGS. 4 and FIG. 6, see especially 82, 84, 90, and 88 of FIG. 6); means for modifying luminance information of an input image received by the projector by the attenuation array (also see function of 50 in FIGS. 4 and 6, see especially 86 of FIG. 6); and means for driving the projector with the modified luminance information (also see function of 50 in FIGS. 4 and 6) such that the image produced on the screen is uniform in luminance.

Regarding claim 12, Mayer, III discloses further comprising: means for calculating homographies between the means for capturing, the screen, and the projector (see 50 of FIG. 4 and function thereof in FIG. 6); and means for modifying a shape of the image based upon the homographies (also see 50 of FIG. 4 and function thereof in FIG. 6 and see col. 8, lines 46-53).

Regarding claim 13, Mayer, III discloses further comprising: means for identifying the projector pixel that subtends to the largest projected area on the screen (see 40 and 50 of FIG. 4 and function of 50 in FIG. 6); and means for organizing the ratio determined for each pixel into an array (also see 50 of FIG. 4 and function of 50 in FIG. 6).

The method of claims 1, 2, and 4-6 are similarly met by the features and function of the above-mentioned elements for the system of claims 7, 8, and 10 and apparatus of claims 11-13.

***Allowable Subject Matter***

1. Claims 3 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

2. The following is a statement of reasons for the indication of allowable subject matter:

Claim 3 has been found to be allowable because the prior art of record either alone or in combination neither discloses nor makes obvious the method comprising the method step of calculating a value,  $w$ , wherein  $w$  is equal to  $|h_7x_p + h_8y_p + h_9|$  and determining which projector pixel has the smallest calculated value of  $w$ , in combination with the particular combination of features recited in claims 1 and 2.

Claim 9 has been found to be allowable because the prior art of record either alone or in combination neither discloses nor makes obvious the system comprising the homography including a value  $|h_7x_p + h_8y_p + h_9|$ , in combination with the particular combination of features recited in claims 7 and 8.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

  
**JUDY NGUYEN**  
**SUPERVISORY PATENT EXAMINER**